Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matters of	)	
Expanding Flexible Use of the 3.7 to 4.2 GHz Band	)	GN Docket No. 18-122
Petition for Rulemaking to Amend and Modernize Parts 25 and 101 of the Commission's Rules to Authorize and Facilitate the Deployment of Licensed Point-to-Multipoint Fixed Wireless Broadband Service in the 3.7-4.2 GHz Band	)	RM-11791
Fixed Wireless Communications Coalition, Inc., Request for Modified Coordination Procedures in Band Shared between the Fixed Service and the Fixed Satellite Service	)	RM-11778

COMMENTS OF GCI COMMUNICATION CORP.

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COMMENTS OF GCI COMMUNICATION CORP.

GCI Communication Corp. ("GCI") submits the following comments in response to the Public Notice released by the Wireless Telecommunications Bureau, International Bureau, Office of Engineering and Technology, and Office of Economics and Analytics, which seeks comment on specific, recent, proposals and information regarding the future use of the 3.7-4.2 GHz band ("C-Band") submitted in the above-referenced proceedings (the "Notice").[1] These comments largely focus on the recent proposal submitted by ACA Connects – America's Communications Association, Competitive Carriers Association, and Charter Communications,

[1] *Wireless Telecommunications Bureau, International Bureau, Office of Engineering and Technology, and Office of Economics and Analytics Seek Focused Additional Comment in 3.7-4.2 GHz Band Proceeding*, GN Docket No. 18-122, RM-11791, RM-11778, Public Notice, DA 19-678 (rel. July 19, 2019) ("Notice").

Inc. (collectively, the "ACA Connects Coalition Proposal"),[2] but also discuss aspects of other proposals on the record as well.

I. INTRODUCTION AND SUMMARY

The future of the C-Band presents a unique, complex issue, involving various stakeholders and interests – many of which are often not in line with one another. GCI commends the Federal Communications Commission ("FCC" or "Commission") for recognizing the importance of this issue, and providing the opportunity for additional comment from interested parties regarding recent updated and new proposals on the record.

As GCI has explained throughout this proceeding, it provides critical services over the C-Band, including critical long-distance services; FAA real-time assistance; LTE-over-Satellite; telehealth and distance-learning services. GCI also relies on the C-Band to provide important rural broadband and programming services to rural and remote villages in Alaska – many of which would not otherwise receive such services. The loss or degradation of such services resulting from interference or operating changes to the band could be catastrophic and, in some cases, result in the potential for injury or loss of life.

The solution to the C-Band puzzle is not as simple as moving incumbent services into a smaller portion of the band, or onto a different means of transmission – at least not in Alaska. GCI relies on the full 500 MHz of the C-Band for the provision of critical and important services. Part of this reliance is due to the need for full-band, full-arc flexibility to efficiently shift frequencies and satellites in the event of a transponder or satellite failure, changing customer requirements or market competition. GCI also requires the ability to operate on other

[2] Letter from ACA Connects, Competitive Carriers Association, and Charter Communications, Inc., to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122 (filed July 2, 2019) ("ACA Connects Coalition Proposal").

western arc satellites with little notice in order to provide restoration of terrestrial networks that service rural Alaska. As GCI's experience demonstrates, there are no suitable alternatives to the C-Band in rural and remote Alaska at this time. Fiber, alternative satellite bands, and even microwave technology are unable to replicate the C-Band's coverage and capacity, partially due to Alaska's harsh weather, unique topography and land regulation. Simply put, GCI uses the C-Band out of necessity, not convenience.

The critical services that GCI provides over the C-Band, coupled with the unique Alaskan considerations when it comes to serving rural and remote customers, support ensuring the continuity of C-Band operations in Alaska. The unique reliance on the C-Band in Alaska confirms the need for a "suitable, alternative solution" as noted by the ACA Connects Coalition Proposal. Such a solution should involve excluding the State of Alaska from any changes to the allocation of or services provided via the C-Band, and incorporating the following protections for the current and future C-Band operations of incumbents: (1) commitments from satellite operators and MVPD programmers alike to maintain the status quo of Alaskan C-Band operations; (2) assurances of protections from interference; and (3) reimbursement to Alaska earth station operators for any impacts to their operations as a result of the reallocation of the C-Band services, regardless of whether that occurs exclusively in the Lower 48.

II. GCI RELIES ON UNFETTERED ACCESS TO THE C-BAND FOR THE PROVISION OF CRITICAL AND IMPORTANT SERVICES TO CONSUMERS, BUSINESSES AND THE FEDERAL GOVERNMENT

GCI uses the C-Band for middle-mile backhaul services, as well as for traditional video content distribution. This band is particularly important to GCI and other FSS earth station operators in Alaska that face significant and unique challenges in providing telecommunications services to the state, including harsh weather, vast distances between villages, limited satellite

coverage, high-capacity demand, and interference issues. This spectrum enables GCI to provide reliable critical and important services throughout the state, and particularly to rural and remote villages, in a manner that cannot presently be replicated by other methods of transmission. Below are a number of examples of services provided by GCI using the C-Band spectrum, which have also been detailed in related GCI comments:[3]

- Providing video programming to rural and remote areas – particularly in areas where GCI, and other Alaskan operators, are unable to deploy fiber. GCI also relies on the C-Band to provide broadband Internet services to rural and remote villages in Alaska – many of which would not otherwise receive such services.
- Offering critical long-distance services, such as measured toll service to remote villages that is oftentimes the only communications link to the "outside world" and special access services to businesses, native corporations, and local, state and federal governments.
- Providing the FAA with real-time weather-camera information using the GCI satellite network for middle-mile backhaul. Based on data compiled by the FAA, this program has reduced weather-related aviation incidents in Alaska by 85 percent, and has reduced how often pilots must turn a plane around due to weather by 66 percent.[4]
- Meeting its obligations under the Alaska Plan through the use of C-Band spectrum to deliver middle-mile capacity with last-mile LTE service – a critical initiative to provide needed services to under- and otherwise un-served areas.

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[3] *See, e.g.*, Letter from Jessica Gyllstrom, Counsel, GCI, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122 (filed July 18, 2019) ("GCI July 2019 Ex Parte"); Reply Comments of GCI Communication Corp., GN Docket No. 18-122 et al. (filed Nov. 27, 2018) ("GCI 2018 C-Band Reply Comments"); Comments of GCI Communication Corp., GN Docket No. 18-122 et al. (filed Oct. 29, 2018) ("GCI 2018 C-Band Comments"); Comments of GCI Communication Corp., GN Docket No. 18-122 (filed May 31, 2018) ("GCI 2018 Sharing Comments"); Reply Comments of General Communication, Inc., GN Docket No. 17-183 (filed Nov. 15, 2017) ("GCI 2017 Mid-Band Reply Comments"); Comments of General Communication, Inc., GN Docket No. 17-183 (filed Oct. 2, 2017)("GCI 2017 Mid-Band Comments"); Letter from Jessica Gyllstrom, Counsel, General Communication, Inc., to Marlene H. Dortch, Secretary, FCC, in RM-11791 (Sept. 25, 2017); Letter from Michael Lazarus, Counsel, General Communication, Inc., to Marlene H. Dortch, Secretary, FCC, in GN Docket No. 17-183 et al. (Sept. 20 2017); Comments of General Communication, Inc., RM-11791 (Aug. 7, 2017).

[4] GCI, News Release, *Weather Camera Program Protects Pilots, Saves Lives in Alaska* (Apr. 19, 2017) https://www.gci.com/about/newsreleases/weather-camera-program.

- Supporting the delivery of telehealth services such as teleradiology, remote patient monitoring, medical network solutions, and live video-conferencing to customers in Alaska;[5] and

- Offering broadband access, video-conferencing and state of the art digital tools to schools and libraries in rural and underserved regions of the United States, which have become an essential part of educating students in rural Alaska, allowing these children and local residents to gain an education that would otherwise not be made available.[6]

Without continued access to the C-Band, these critical services, and the residents that rely on them, will be severely impacted.

III. ALASKA C-BAND SERVICES CANNOT BE REPACKED INTO A SMALLER PORTION OF THE BAND, NOR CAN THEY BE SERVED BY OTHER MEANS OF TRANSMISSION AT THIS TIME

The ACA Connects Coalition Proposal seeks to clear a minimum of 370 megahertz for terrestrial wireless use on a nationwide basis, which would be achieved through a combination of (a) repacking non-MVPD earth station users to the upper portion of the band and (b) transitioning the delivery of MVPD video programming from the C-Band to fiber.[7] This proposal is not a viable solution for Alaskan C-Band operations, and therefore, Alaska should be excluded entirely from the ACA Connects Coalition Proposal, if adopted by the FCC, and provided the protections discussed herein.[8]

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[5] *See* GCI Telehealth, http://www.connectmd.com/ (last visited Aug. 6, 2019).

[6] *See* GCI Education Solutions, https://www.gci.com/business/solutions/education (last visited Aug. 6, 2019).

[7] ACA Connects Coalition Proposal at pp. 3, 4 (noting that "satellite operators would repack services used by non-MVPD earth station users to the upper portion of the C-Band" which would also require MVPD programming to move from the upper portion of the band to the lower part). *Id.* at p. 4.

[8] GCI submits that Alaska should be excluded from *any* proposal that is ultimately adopted by the FCC that will reallocate all or a portion of the C-Band.

A. GCI Relies On The Full 500 MHz of the C-Band For The Provision of Critical and Important Services

GCI's critical and important services cannot be repacked into any smaller portion of the C-Band because such services require the full use of the 500 MHz C-Band to reliably serve the State of Alaska.[9] In the few locations where GCI uses just less than the full 500 MHz, it relies on the flexibility afforded by the FCC's full-band, full-arc policy to efficiently shift frequencies and satellites in the event of a transponder or satellite failure, changing customer requirements or market competition (resulting in capacity cost reductions).[10] In addition to relying on primary, full-time satellites, GCI also requires the ability to operate on other western arc satellites with very little notice (*i.e.*, less than four hours) in order to provide restoration of terrestrial networks that service rural Alaska. GCI has contracted with satellite providers to obtain "in-orbit protection," which allows GCI to access additional capacity at other orbital locations (with priority assignment) in the event that the primary spacecraft experiences a catastrophic failure.

Eliminating the full-band, full-arc coordination policy ignores the very-real fact that changes in frequency are an integral part of the day-to-day operations of FSS operators. Removing this flexibility would make it extremely difficult, if not impossible, for GCI to minimize interruptions to its critical services. Such interruptions could result in the potential for injury or loss of life. These consequences should be avoided by maintaining this policy going

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[9] The C-Band Alliance proposal recognizes that it is not possible to repack Alaskan operations into the top of the band. *See e.g.*, Comments of the C-Band Alliance, GN Docket No. 18-122 et al., at n. 50 (filed Oct. 29, 2018) (noting that Alaska would be carved out from its plan to repurpose a portion of the C-Band).

[10] Indeed, GCI routinely adjusts the frequencies and other parameters of satellite carriers in its network to facilitate the addition of new services, mitigation of interference issues, and other changes to GCI's operations.

forward. In order to do so, the full 500 MHz of spectrum must remain available for C-Band use in Alaska.

B. Fiber Is Not A Suitable Transmission Alternative to the C-Band for Many Remote Alaskan Communities and Alternative Means of Transmission Do Not Exist At This Time

The ACA Connects Coalition Proposal aptly recognizes that "fiber delivery is not a possible solution for remote areas of Alaska."[11] Fiber is virtually non-existent for most areas of Alaska due to the unique attributes of the State, including, extreme weather, government-related barriers, and the general topography of the Arctic.

Much of the land in rural Alaska is protected by numerous federal and state laws that limit human activity, and thus preclude fiber builds.[12] Even absent federal land regulations, the distance between many of GCI's C-Band earth stations and fiber headends is vast (e.g., hundreds of miles), and long fiber runs in Alaska are not feasible solutions. In many areas, such fiber would run over the Arctic tundra and would need to be safeguarded against damage caused by the complex and changing structure of permafrost, which can range in thickness from a single meter to many hundreds of meters. Uneven freezing and thawing at or near the surface can result in dramatic changes to landforms, such as ice wedges (i.e., growing cracks in the ground) and pingos (i.e., small hills that arise quickly due to subsurface pressures), which can damage buried

[11] ACA Connects Coalition Proposal at n.1.

[12] Including the Alaska National Interest Lands Conservation Act, the National Wildlife Refuge System Administration Act, the National Wildlife Refuge System Improvement Act of 1997, the Wilderness Act, the Wild and Scenic Rivers Act, the Marine Mammal Protection Act, and the Arctic Refuge Comprehensive Conservation Plan. *See* Amended Petition of GCI for Waiver of Certain Channelization and Other Restrictions on Common Carrier Fixed Point-to-Point Operations Between 6425 and 7125 MHz, WT Docket No. 16-209, at p. 6 (filed May 3, 2016) ("GCI Amended Petition").

fiber optic cable. [13] Other areas might have to rely on submarine fiber, which carries inherent risk, particularly in Alaska's cold and icy waters.[14] Submarine fiber would have to run across hundreds of miles of open arctic ocean and would need to be safeguarded against additional elements, including ice and rough sea floors.[15]

A business case for fiber is challenging, if not impossible, due to the costs associated not just with deployment and repairs in difficult to access areas, but with the hardening required to make fiber a reliable telecommunications option in such areas.[16] GCI utilizes geostationary satellites for this very reason. Satellite backhaul does an extremely effective job covering large geographic areas. If it were feasible to install fiber to serve these rural Alaskan communities, then Alaskan carriers would have already done so. This fact is aptly reflected in the ACA Connects Coalition Proposal.

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[13] The International Bureau has recognized that "[f]iber is not a viable option due to the freeze-thaw cycles experienced in this [remote] region of Alaska." *In the Matter of GCI Communication Corp. Request for Waiver of the Temporary Freeze on Applications for New or Modified Fixed Satellite Service Earth Stations in the 3.7-4.2 GHz Band*, IBFS File No. SES-LIC-20180608-01392, Order, DA 19-725, ¶ 6 (IB Aug. 1, 2019) ("GCI C-Band Waiver Order"). *See* U.S. Fish & Wildlife Serv., *Ice Wedges, Polygons, and Pingos*, https://www.fws.gov/refuge/arctic/permcycle.html (last visited Aug. 6, 2019) (describing the process by which the permafrost cycles through these changes); Nat'l Snow & Ice Data Ctr., *All About Frozen Ground – How Does Frozen Ground Affect Land?* https://nsidc.org/cryosphere/frozenground/how_fg_affects_land.html (last visited Aug 6, 2019) (describing how freezing and thawing in the Arctic can change the shape of the land).

[14] The more ice that accumulates, the higher the probability of cuts to the fiber, resulting in decreased reliability.

[15] For example, in Chevak, a remote village located in western Alaska, the closest location with existing fiber-optic facilities is in Nome, AK, which is hundreds of miles away and across the Bering Sea. The shortest distance between Nome and Chevak includes both over-land and subsea components, making the route a difficult one to navigate – from both a financial and environmental standpoint. Connecting Chevak to existing fiber would require (a) a new subsea fiber to be buried deep into hundreds of mile of arctic ocean floor *and* (b) terrestrial fiber to be laid either across the tundra or buried below the tundra.

[16] Other unique challenges concerning fiber deployment in Alaska include consideration of bird and animal migration and birthing schedules, as well as shorter construction periods due to severe weather and lack of light during winter months.

Alternative options to fiber, such as microwave facilities, or alternative satellite bands, are also not suitable replacements for the C-Band in Alaska at this time. As the FCC has recognized, certain conditions unique to Alaska make the provision of communications services in the state particularly difficult,[17] and such challenges were the impetus for GCI to initially explore the use of the C-Band during the 1980s. Over 35 years later, the C-Band remains the best viable option for reliable telecommunications services in these areas.

Microwave Operations. GCI relies on its TERRA microwave radio system throughout the state – including in some rural areas. In remote villages, the microwave system is the primary link to communications, and if these systems experience degraded service, a communications black-out can result. GCI has found that such microwave systems are particularly susceptible to extreme weather, such as the freezing and icing that occur during the Alaskan winter and spring months (roughly anywhere from September to June) and result in significant damage to the microwave radio antennas and wave guides, leading to link degradation and service outages. In one instance, GCI took precautionary steps to try and prevent this damage, such as reducing the height of the tower by nearly 70 feet in order to reduce the risk of falling ice and minimize damage; however despite this effort, GCI's services were still severely impacted and disrupted. In such an instance, GCI's only solution was the use of the C-Band, which restored service to its customers throughout the winter and spring months.[18]

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[17] *See Alaska Plan R&O* at ¶ 72 (quoting *Connect America Fund et al*., Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663, 17829 (2011)) (noting unique conditions in Alaska, including "its remoteness, lack of roads, challenges and costs associated with transporting fuel, lack of scalability per community, satellite and backhaul availability, extreme weather conditions, challenging topography, and short construction season").

[18] *See* GCI C-Band Waiver Order at ¶ 6.

Alternative Satellite Bands. Ku-band deployments are unable to withstand the high wind and severe weather in Alaska. As a general matter, the currently available Ku- and Ka-band are not realistic alternative options due to (a) the limited lower link availability resulting from more challenging propagation conditions and higher link margins required for Ku- or Ka-band fading;[19] (b) the prohibitively high cost associated with replacing or upgrading ground segment equipment; and, (c) the lack of available Ku- or Ka-band satellites having satisfactory coverage over the State of Alaska – in other words, there is not enough capacity or coverage of Ku-band satellites to move all of GCI's C-Band services and there is minimal, if any, Ka-Band coverage in Alaska. For these reasons, alternative satellite bands are not currently a viable option for migrating GCI's C-Band operations.

IV. THE UNIQUE RELIANCE ON THE C-BAND IN ALASKA CONFIRMS THE NEED FOR A "SUITABLE, ALTERNATIVE SOLUTION"

GCI appreciates the ACA Connects Coalition Proposal's recognition of the need for "[s]uitable alternative solutions [to] be made available for incumbent C-Band operators who provide critical services throughout [Alaska]."[20] Such a solution should exclude the State of Alaska from any changes to C-Band services, operations or allocations. Such an exclusion must incorporate the following protections for the current and future C-Band operations of incumbents: (1) commitments from satellite operators and MVPD programmers alike to maintain the status quo of Alaskan C-Band operations; (2) assurances of protections from interference; and (3) reimbursement to Alaska earth station operators for any impacts to their operations as a result of the reallocation of the C-Band services in the Lower 48.

[19] For instance, weather characteristics such as rain, snow, or fog may cause signal fade on these satellite bands.

[20] ACA Connects Coalition Proposal at n. 1.

A. Alaskan C-Band Operations Must be Excluded From a Reallocation of the C-Band and Commitments to Maintain Incumbent Services Must Be Made

As GCI has emphasized throughout this proceeding, its use of the C-Band is out of necessity, not convenience. This was recently confirmed by the International Bureau in finding that GCI's request for a new C-Band station in western Alaska, despite a filing freeze, would allow for "a necessary extension of existing services" in the "absence of viable alternatives."[21] As demonstrated above, GCI's C-Band services are critical and important for Alaska residents, particularly those that reside in remote and rural villages. Such C-Band services must be maintained regardless of the outcome of this proceeding. Alaska should be excluded from the proposed changes to the allocation of the C-Band.

In order for it to be "feasible to transition certain regions" [22] of the country to new wireless uses under the ACA Connects Coalition Plan, certain assurances must be made to Alaskan operators that all of their current and future C-Band operations will be adequately maintained, and there will be no impact or changes made to their services, regardless of any modifications to the C-Band outside of Alaska.[23] Specifically, any plan to reallocate the C-Band in the Lower 48 must include two critical commitments: (1) satellite operators must commit to continue to provide the full 500 MHz capacity in Alaska; and (2) programmers must commit to

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[21] GCI C-Band Waiver Order at ¶¶ 5, 8 (further finding that there was good cause to grant a waiver of the filing freeze based on "(1) the unique operational conditions in remote western Alaska, (2) the absence of viable alternatives, and (3) the importance of the services that GCI provides to these remote Alaskan villages."). *Id.* at ¶ 5.

[22] Notice at p. 3.

[23] GCI has previously explained its concern, which is recognized in the ACA Connects Coalition Proposal, that if more C-Band spectrum is repurposed in one area than another (such as in the Lower 48 than in Alaska), then the continued need for C-Band availability in the area that such spectrum is not repurposed (such as in Alaska) will become a much greater concern for earth station operators than for satellite operators. This continued availability will be of little value to satellite operators who may not find it worthwhile to continue providing the full C-Band capacity in Alaska. *See* GCI July 2019 Ex Parte.

continue to transmit programming content via the C-Band in Alaska.[24] With such commitments, incumbent C-Band earth station operators and customers will be provided with the certainty they need to continue to provide critical and important services to Alaskan consumers.

B. C-Band Services Must Be Fully Protected From Interference

Excluding Alaska and requiring commitments to maintain services would mean very little if such services were constantly degraded due to interference from new uses. GCI continues to have concerns with proposals seeking to introduce fixed wireless P2MP services into the band alongside FSS in Alaska.[25] For instance, it will be extremely difficult, if not impossible, to protect incumbent FSS operations in the C-Band from P2MP FS co-channel sharing, particularly in Alaska where the exclusion zones will be large. As a result, if the FCC allows P2MP fixed services in the C-Band, GCI requests that such services not be permitted to operate in Alaska.

Coexistence between the two services is problematic due in large part to the fact that the received signal level ("RSL") at the satellite antenna is extremely small. It is so small that very sensitive low-noise amplifiers ("LNAs") are required to recover the signal and discriminate it from the thermal noise floor. The presence of even small amounts of external, intentional radiator energy can easily overwhelm the input signal limits of an LNA and saturate it.[26] Even

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[24] The ACA Connects Coalition Proposal envisions a commitment from satellite operators "to continue serving non-MVPD earth station operators over the remaining spectrum without price increases for the specified reallocation period." ACA Connects Coalition Proposal at p. 5. GCI seeks to broaden that proposal to include a commitment from programmers because it shares the concern "that continued pressure to increase the amount of spectrum reallocated in this proceeding greatly risks breaking the content distribution system" currently serving Alaskan residents. Letter from Rick Kaplan, General Counsel and EVP Legal and Regulatory Affairs, NAB, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122, pp. 1-2 (Aug. 1, 2019).

[25] *See* Notice at pp. 5-6.

[26] Received signals from geostationary satellites are dramatically lower than those observed in terrestrial microwave solutions. This requires the use of ultra-sensitive low noise amplifier

the smallest levels of interference could be harmful to the provision of services over the C-Band. GCI requires clear, unobstructed access to/from the target satellite in order to achieve reliable operation of circuits delivered via satellite. Alternatively, if saturation of the input does not occur, the presence of interference increases the noise density and causes a degradation of the signal quality, rendering the signal unrecoverable.

Once interference occurs, the mitigation of that interference can become very difficult to realize because multiple transmitters could operate in the same region, with spectrum re-use. Service affecting interference events occur in existing satellite networks as new antennas come into networks or fall out of performance specifications. Under those conditions, identifying the source of the interference, particularly if the operation is intermittent or time-of-day specific, can take days or weeks, and requires expensive, complex triangulation systems. Such an occurrence can cripple the critical services already being provided in the band.

GCI is also skeptical that exclusion zones will be an adequate solution for interference concerns, particularly in Alaska. Exclusion zones provide an insufficient protection and would not be feasible in AK because the exclusion zones necessary for these services would require significant separation distances from terrestrial and mobile transmitters and would very likely cover the large population centers where GCI currently provides a variety of critical services via C-Band, thus eliminating the area in which any new terrestrial wireless services may be desirable.

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components in order to overcome thermal noise. The presence of intentional, in-band interferers can easily swamp the input power threshold of an LNA.

C. Alaskan Operators Must Be Made Whole From The Effects of Reallocation of The C-Band In The Lower 48

GCI has invested well over $100 million in developing and deploying the C-Band over the past 35 years in order to develop a reliable solution for Alaska's communications needs. Incumbent C-Band customers and earth station operators must be "made whole and given long term certainty through funding and reimbursement"[27] of costs related to reallocation of the C-Band. Even if current C-Band capacity, coverage and services are maintained in Alaska, Alaskan earth station operations may still be impacted economically as a result of the reallocation of these services in the Lower 48. For instance, there will likely be increased operating costs associated with keeping satellites in operation for a limited areas like Alaska; specifically, Alaska earth station operators may become responsible for paying the full cost of transmission – costs that are currently shared among the whole nation. Such an outcome would prohibitively increase such fees, making it difficult, if not impossible for Alaskan operators to continue offering the critical and important services they have worked so hard to maintain.

If there are any changes to Alaskan earth station operations, such incumbents must be reimbursed to be made whole. Such compensation may include, but not be limited to, equipment and installation costs; research and development costs; increased operating expenses as a result of more remote C-Band equipment;[28] supplemental or replacement earth station antennas if necessary; associated installation and structural support; additional vendor relationships; additional connectivity sources and any other cost that is a direct or indirect result of action taken by the FCC in this proceeding.

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[27] ACA Connects Coalition Proposal at 2.

[28] Indeed, if the FCC elects to move C-Band operations to more rural and remote areas, rather than urban areas, the FCC would also need to account for – and reimburse – the increased operating costs associated with keeping satellites in operation for those limited areas.

V. CONCLUSION

The unique reliance on the C-Band in Alaska confirms the need for a "suitable, alternative solution." For the reasons discussed herein, such a solution should involve excluding the State of Alaska from any changes to the allocation of the C-Band. The exclusion must incorporate the following protections for the current and future C-Band operations of incumbents: (1) commitments from satellite operators and MVPD programmers alike to maintain the status quo of Alaskan C-Band operations; (2) assurances of protections from interference; and (3) reimbursement to Alaska earth station operators for any impacts to their operations as a result of the reallocation of the C-Band services in the Lower 48.

Respectfully submitted,

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